#12 Appeal Brief mailed 8/17/04

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August 2, 2004	Adrian Villarreal		August 2, 2004
Date Mailed	Name	Signature	Date

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Applicant:	Andrew Kuzma
Serial No.:	09/728,572
Filed:	November 30, 2000
For:	APPARATUS AND METHOD FOR MONITORING STREAMED MULTIMEDIA QUALITY USING DIGITAL WATERMARK
Docket No.:	42P9903
Examiner:	Abolfazl Tabatabai
Art Unit:	2625

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APPEAL BRIEF
37 C.F.R. § 1.192; MPEP § 1206

Sir:

This appeal brief is submitted in support of the Notice of Appeal mailed by Applicant on June 1, 2004, for the above-noted patent application. This brief is submitted in triplicate pursuant to 37 C.F.R. §1.192. Applicant respectfully requests consideration of this appeal and allowance of the application by the Board of Patent Appeals and Interferences.

I. REAL PARTY IN INTEREST

The real party in interest in this appeal is Intel Corporation ("Intel"), a Delaware corporation having a principal place of business at 2200 Mission College Blvd, Santa Clara, California 95052. Intel is the assignee of the entire right, title and interest in the above-captioned application by virtue of an assignment recorded at the U.S. Patent Office at Reel 011527, Frame 0411.

II. RELATED APPEALS AND INTERFERENCES

Applicant and Applicant's legal representative know of no interferences or other appeals that will directly affect, be directly affected by, or have a bearing on the Board's decision in the pending appeal.

III. STATUS OF CLAIMS

Claims 1-19 are pending in the application and are the claims on appeal. The status of the pending claims is as follows:

(i) Independent claims 1, 8, 11, and 14 stand rejected by the Examiner under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,226,618 B1 to Downs et al (hereinafter "Downs").

(ii) Dependent claims 2-4, 9, 10, 12, 13, and 15-17 stand rejected by the Examiner under 35 U.S.C. §102(e) as being anticipated by Downs.

(iii) Dependent claims 5, 6, 18, 19 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Downs in view of U.S. Patent No. 6,473,561 B1 to Kawaguchi et al (hereinafter "Kawaguchi").

IV. STATUS OF AMENDMENTS

Prior to the final Office Action mailed January 30, 2004, claims 1-19 were pending in the application. In an amendment submitted in response to the final Office Action, Applicant did not make any substantive amendments to any of the pending claims.

A copy of all claims on appeal, as finally rejected by the Examiner on January 30, 2004, is attached hereto in the Appendix.

V. SUMMARY OF INVENTION

The present invention relates generally to streaming multimedia, and in particular, relates to a digital watermark used to monitor the quality of streamed multimedia over a network (page 1, lines 5-7). Figure 1 illustrates an apparatus embodiment of the invention comprising a system 10. The system 10 includes one or more network servers 14 communicatively coupled to one or more terminals 16 via one or more links 18. The server 14 can provide a web site having hypertext markup language (HTML) web pages to the terminals 16, using a protocol such as

hypertext transfer protocol (HTTP). The terminals 16 can comprise personal computers (PCs) to access the server 14 (Spec. at page 5, lines 1-5). The link 18 and other links in the system 10 can include any type of high-speed data lines or networks that can accommodate high-speed bit rates, including T1, xDSL, SONET, ATM, Ethernet, etc. Telephone modem links may also be used (Spec. at page 5, lines 15-18).

The system 10 can include one or more database systems 28 to store many types and formats of data. For example, the database system 28 can store recorded multimedia content for distribution over the Internet. The database system 28 can be part of the server 14 or it can be a separate network component communicatively coupled to the server 14. The database system can include one or more database units 30-36 (Spec at page 5, line 25 to page 6, line 3). Database units 30-36 can be coupled to each other and to the server 14, as shown symbolically by a link 38, thereby allowing communication/linking and exchange of data between these components. In one embodiment, any of the database units 30-36 can store metadata that point to files (e.g., image files, media files, etc.) located on a distributed network of storage arrays (within the network 12 or the server 14), instead of or in addition to, such files located in the database system 28 (Spec. at page 6, lines 7-14).

The system 10 can include a user authentication unit 44 that stores user identifications (IDs), passwords, security codes, or other information required for granting the terminals 16 with access to the server 14 (Spec. at 7, lines 6-8). The server 14 may be communicatively linked to an administration unit 42 that can be, for example, a company that provides and maintains the services of the server 14, including but not limited to, coordination of downloads into the database unit 32, providing user accounts and user IDs for the terminals 16, providing customer service support, processing billing and account information, etc (Spec. at page 7, lines 12-16).

At least one monitor station 46 is provided in the network 12. The monitor station 46 periodically requests content from the server 14. Although only a single monitor station 46 is shown, in actual implementations, multiple monitor stations 46 would be placed at various nodes or locations of the network 12. As will be seen in further detail below, the monitor station 46 is used to monitor the quality of the content distributed by the server 14 over the network 12 (Spec. at page 7, lines 17-22).

The operation of the system 10, as well as an embodiment of the method of the invention, is illustrated in Figure 2. At box 201, a digital watermark is integrated into the content. Typically, for live event content, integration can be done by an encoder 40. For pre-recorded events, the integration of the digital watermark into the content is normally done well prior to distribution of the service. In such as case, the content (with the digital watermark) is stored in databases 30, 36 (Spec. at page 8, lines 4-10). Selection of a particular digital watermarking technique is important. Generally, the digital watermark selected should be sensitive to degradations of several characteristics. For example, spatial degradation of the image (e.g. speckle, noise, and tearing) should be indicated. Temporal degradation, such as dropped frames and missing packets, should be indicated. System resource usage, such as CPU and memory utilization, should be indicated. Further, the digital watermark should be easily inserted into the content without heavy computation or signal processing. Thus, the digital watermark should be generated on a variety of systems without significant CPU loading. Finally, the digital watermark should be amenable to statistical analysis, so that meaningful statistics can be easily generated. (Spec at page 9, lines 13-22)

At box 203, the digital watermark content to be served is analyzed to obtain a reference point for a "pure" content signal that has not been served. This allows a measuring stick to be obtained for determining the amount of degradation to the content due to propagation through the network. The analysis is typically performed by hardware or software located at the server 14 (Spec. at page 8, lines 11-15).

Next, at box 205, the content is distributed (or served) over the network. At various locations in the network, at box 207, the distributed content is received by at least one monitor station 46. The monitor stations 46 can be specifically designed and placed at strategic nodes in the network. In any event, at box 209, the purpose of the monitor stations 46 is to capture the distributed content at various locations in the network and to perform an analysis of the digital watermark to determine the extent of any degradation. Any degradation to the digital watermark would most likely correlate well to the amount of degradation in the actual content. The analysis information done at the monitor stations 46 can then be stored for later retrieval or be automatically sent to the server 14 using any conventional technique (Spec. at page 8, line 25 to page 9, line 5).

Finally, at box 211, the information on the digital watermark of the distributed content is compared to the information on the digital watermark of the pure content. The comparison can be done using any one of many conventional statistical measures. Based upon this comparison, the quality of delivered content can be assessed. The comparisons can be used to improve delivery systems (Spec at page 9, lines 6-10). The types of tests to be performed on the extracted watermark include: (1) correlation with the expected watermark image quality baselines, both spatially and temporally; (2) RMS deviations in spatial amplitudes from quality baseline; (3) frequency deviations from quality baseline; (4) size, in pixels, of deviations from quality baseline; and (5) duration, in milliseconds, of pixel deviations from quality baseline (Spec. at page 12, lines 5-13).

VI. ISSUES

The issues presented in this appeal are:

(i) Whether claims 1-4 and 8-17 are unpatentable because they are anticipated by Downs; and

(ii) Whether claims 5, 6, 18, 19 are unpatentable because they are rendered obvious by Downs in view of Kawaguchi.

VII. GROUPING OF CLAIMS

Applicant urges that claims 1-3, 5-7, 8, 9, 11, 12, 14-16, 18, and 19 stand and fall together, claims 4 and 17 stand and fall together, and claims 10 and 13 stand and fall together. The reasons why the above three groups of claims are believed to be separately patentable are presented below in section VIII.D.

VIII. ARGUMENTS

This section sets forth Applicant's arguments against the rejections and in favor of the patentability of the claims on appeal. Part VIII.A provides a brief overview of the Downs and Kawaguchi references, which the Examiner used in the final Office Action to reject the claims on appeal. Next, part VIII.B discusses why Downs does not anticipate claims 1-4 and 8-17. Part VIII.C discusses why Downs and Kawaguchi, whether taken alone or in combination, fail to disclose, teach or fairly suggest one or more expressly recited elements in claims 5, 6, 18 and 19 and therefore cannot render these claims obvious. Finally, part VIII.D discusses why Applicant

believes the different claim groups are separately patentable and stand or fall independently of the other groups.

A. Overview of Downs and Kawaguchi References.

1. Downs.

Downs relates generally to a method and apparatus of securely providing data to a user's system. (Downs, column 3 lines 40-42).

Downs discloses using digital watermarking technology to generate a hidden and tamper resistant digital code embedded in digital content to define the allowable number of secondary copies and playbacks. When the digital content containing the watermark is accessed in a compliant end-user device, an end-user player application reads the watermark to check the use restrictions and updates the watermark as required. If the requested use of the content does not comply with the usage conditions, for example when the number of copies has been exhausted, the end-user device will not perform the request. (Downs, column 7 lines 41-55).

Downs further discloses using digital watermarking to identify the origin of authorized or unauthorized copies of content. An initial watermark is embedded in the content by the content proprietor to identify the content proprietor, specify copyright information, define geographic distribution areas, and add other pertinent information. A second watermark is embedded in the content at the end-user device to identify the content purchaser (or licensee) and end-user device, specify the purchase or license conditions and date, and add any other pertinent information. (Downs, column 7 lines 56-65).

Downs does not disclose, teach, or suggest using digital watermarks to identify or assess quality degradation.

2. Kawaguchi.

Kawaguchi discloses a technique based on a property of the human vision system for hiding information in an image . The method includes the steps of segmenting each region of a vessel image into informative and noise-like regions by using a threshold value, arranging the data into a series of data blocks, and embedding each data block into the noise-lick regions of the image. Because of its relation to human vision properties, the technique provides an information hiding capacity as large as 50% of the original image data. (Kawaguchi, column 2 lines 13-20)

Kawaguchi does not disclose, teach, or suggest using digital watermarks to identify or assess quality degradation.

B. Claims 1-4 and 8-17 are not anticipated by Downs.

A claim is anticipated only if each and every element, as set forth in the claim, is found in a single prior-art reference. MPEP § 2131; *Verdegaal Bros. v. Union Oil of California*, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). As explained below, Downs cannot anticipate these claims because it does not disclose every element and limitation recited therein.

1. Summary of Examiner's rejection.

In the final Office Action, the Examiner alleged that independent claims 1, 8, 11, and 14 are anticipated by Downs and gave the following reasoning in support of his rejection:

> Downs discloses a method and apparatus of securely providing data to a user system which comprising [*sic*]: a content server connected to a network, said content server capable of delivering content over said network (column 79, lines 59-67 and column 81, lines 10-17) said content containing a digital watermark (column 7, lines 41-55); and, at least one monitor station to receive said content over said network and analyzing said digital watermark (column 7, lines 41-55) for information indicative of degradation of said content (column 22, lines 2-8).
>
> Downs discloses a method and apparatus of securely providing data to a user method, comprising: integrating a digital watermark into content (column 6, lines 48-51); distributing said content over a network as distributed content (column 23, lines 1-20 and column 70, lines 33-39); receiving said distributed content in at least one location of said network (column 69, lines 1-17); analyzing said digital watermark of said distributed content for information indicative of the quality of said distributed content (column 11, lines 62-67 and column 22, lines 9-24).

In the amendment filed after final rejection, Applicant argued that Downs did not disclose, teach or suggest what is recited in claims 1, 8, 11, and 14. In his Advisory Action, the Examiner considered the request for reconsideration, but responded that it did not place the application in condition for allowance because, according to the Examiner:

> Applicant argues in essence that Downs does not disclose the watermark is itself used in any way to determine the degradation of

> content received from a network. This limitation is taught by Downs (see column 22, lines 2-11), also Downs discloses at least one monitor station to receive said content over said network and analyzing said digital watermark for information indicative of degradation of said content (see column 54, lines 60-64; column 67, lines 35-43 and column 84, lines 11-31).

Advisory Action of May 3, 2004, on continuation sheet.

2. Downs does not anticipate independent claim 1 because it does not disclose every element and limitation of the claim.

Claim 1 recites a system combination including "a content server connected to a network, said content server capable of delivering content over said network, said content containing a digital watermark" and "at least one monitor station to receive said content over said network and analyzing said digital watermark for information indicative of degradation of said content." As discussed below, Applicant believes the Examiner has both misunderstood the disclosure of Downs and misapplied it to the claim, because Downs does not disclose the claimed invention.

The Examiner alleges that Downs discloses "at least one monitor station to receive said content over said network and analyzing said digital watermark for information indicative of degradation of said content" at column 7, lines 41-55 and column 22, lines 2-8. The passage from Downs at column 7, lines 41-55 read as follows:

> The control of Content usage is enabled through the End-User Player Application 195 running on an End-User Device(s). The application embeds a digital code in every copy of the Content that defines the allowable number of secondary copies and play backs. Digital watermarking technology is used to generate the digital code, to keep it hidden from other End-User Player Application 195, and to make it resistant to alteration attempts. When the Digital Content is accessed in a compliant End-User Device(s), the End-User Player Application 195 reads the watermark to check the use restrictions and updates the watermark as required. If the requested use of the content does not comply with the usage conditions, e.g., the number of copies has been exhausted, the End-User Device(s) will not perform the request.

The passage at column 22, lines 2-8, reads as follows:

> The data is invisible or inaudible to a human observer; that is, the data introduces no perceivable degradation to the Content 113.

> Since the watermark survives several steps of content processing, data compression, D-to-A and A-to-D conversion, and signal degradation introduced by normal content handling, the watermark stays with the Content 113 in any representation form, including analog representation.

The disclosure in these passages does not support the Examiner's rejection. These passages simply say that a watermark can be embedded in the content, that the watermark can be used for functions such as usage restriction, and that the watermark survives several steps of content processing. There is no disclosure, teaching, or suggestion whatsoever in these passages, nor anywhere else in Downs, about how degradations in content quality are identified or even assessed after the content is received from a network, and Downs cannot be fairly read to disclose a combination including "at least one monitor station to receive said content over said network and analyzing said digital watermark for information indicative of degradation of said content."

The Examiner furthers allege that Downs discloses a combination including "at least one monitor station to receive said content over said network and analyzing said digital watermark for information indicative of degradation of said content" at column 11, lines 56-67 and column 12, lines 1-12. The two passages cited by the Examiner, which are contiguous in Downs, read as follows:

> The Secure Digital Content Electronic Distribution System 100 is independent of the transmission network connecting the Electronic Digital Content Store(s) 103 and End-User Device(s) 109. It supports both point-to-point such as the Internet and broadcast distribution models such as broadcast television.
>
> Even though the same tools and applications are used to acquire, package, and track Content 113 transactions over various Transmission Infrastructures 107, the presentation and method in which services are delivered to the customer may vary depending on the infrastructure and distribution model selected. The quality of the Content 113 being transferred may also vary since high bandwidth infrastructures can deliver high-quality digital content at more acceptable response times than lower bandwidth infrastructures. A service application designed for a point-to-point distribution model can be adapted to support a broadcast distribution model as well.
>
> C. System Uses

> The Secure Digital Content Electronic Distribution System 100 enables the secure delivery of high-quality, electronic copies of Content 113 to End-User Device(s) 109, whether consumer or business, and to regulate and track usage of the Content 113.

(italics added). Again, the disclosure in these passages simply does not support the Examiner's rejection. Regarding the quality of content sent over a network, the passage says only that the quality can vary. There is no disclosure, teaching, or suggestion whatsoever in this passage, nor anywhere else in Downs, about how content degradations are identified or even assessed, and Downs cannot be fairly read to disclose a combination including "at least one monitor station to receive said content over said network and analyzing said digital watermark for information indicative of degradation of said content."

Finally, the Examiner appears to allege that Downs discloses a combination including "at least one monitor station to receive said content over said network and analyzing said digital watermark for information indicative of degradation of said content" at column 42, lines 37-67 and column 43, lines 1-11. The two passages cited by the Examiner, which are contiguous in Downs, read as follows:

> The Clearinghouse(s) 105 is responsible for the rights management functions of the Secure Digital Content Electronic Distribution System 100. Clearinghouse(s) 105 functions include enablement of Electronic Digital Content Store(s) 103, verification of rights to Content 113, integrity and authenticity validation of the buying transaction and related information, distribution of Content encryption keys or Symmetric Keys 623 to End-User Device(s) 109, tracking the distribution of those keys, and reporting of transaction summaries to Electronic Digital Content Store(s) 103 and Content Provider(s) 101. Content encryption keys are used by End-User Device(s) 109 to unlock Content 113 for which they have obtained rights, typically by a purchase transaction from an authorized Electronic Digital Content Store(s) 103. Before a Content encryption key is sent to an End-User Device(s) 109, the Clearinghouse(s) 105 goes through a verification process to validate the authenticity of the entity that is selling the Content 113 and the rights that the End-User Device(s) 109 has to the Content 113. This is called the SC Analysis Tool 185. In some configurations the Clearinghouse(s) 105 may also handle the financial settlement of Content 113 purchases by co-locating a system at the Clearinghouse(s) 105 that performs the Electronic Digital Content Store(s) 103 functions of credit card authorization

and billing. The Clearinghouse(s) 105 uses OEM packages such as ICVerify and Taxware to handle the credit card processing and local sales taxes.

Electronic Digital Content Store(s) Embodiment

An Electronic Digital Content Store(s) 103 that wants to participate as a seller of Content 113 in the Secure Digital Content Electronic Distribution System 100 makes a request to one or more of the Digital Content Provider(s) 101 that provide Content 113 to the Secure Digital Content Electronic Distribution System 100. There is no definitive process for making the request so long as the two parties come to an agreement. After the digital content label such as a Music Label e.g. Sony, Time-Warner, etc. decides to allow the Electronic Digital Content Store(s) 103 to sell its Content 113, the Clearinghouse(s) 105 is contacted, usually via E-mail, with a request that the Electronic Digital Content Store(s) 103 be added to the Secure Digital Content Electronic Distribution System 100. The digital content label provides the name of the Electronic Digital Content Store(s) 103 and any other information that may be required for the Clearinghouse(s) 105 to create a digital certificate for the Electronic Digital Content Store(s) 103. The digital certificate is sent to the digital content label in a secure fashion, and then forwarded by the digital content label to the Electronic Digital Content Store(s) 103.

Once again, the disclosure in these passages does not support the Examiner's rejection. There is no disclosure, teaching, or suggestion whatsoever in this passage, nor anywhere else in Downs, about how degradations in content quality are identified or assessed after being received from a network, and Downs cannot be fairly read to disclose a combination "at least one monitor station to receive said content over said network and analyzing said digital watermark for information indicative of degradation of said content."

For the reasons above, Applicant respectfully submits that Downs cannot anticipate claim 1 and respectfully requests withdrawal of the rejection and allowance of claim 1.

3. Downs does not anticipate independent claim 8 because it does not disclose every element and limitation of the claim.

Claim 8 recites a method combination including integrating a digital watermark into content, distributing said content over a network as distributed content, receiving said distributed content in at least one location of said network and "analyzing said digital watermark of said

distributed content for information indicative of the quality of said distributed content." By analogy to the discussion above for claim 1, Downs does not disclose every element and limitation recited in the claim. Specifically, Downs does not disclose that the watermark is itself used in any way to determine the degradation of content received from a network. Downs therefore cannot disclose, teach or suggest a method combination including "analyzing said digital watermark of said distributed content for information indicative of the quality of said distributed content." Applicant submits that Downs therefore cannot anticipate claim 8 and respectfully requests withdrawal of the rejection and allowance of the claim.

4. Downs does not anticipate independent claim 11 because it does not disclose every element and limitation of the claim.

Claim 11 recites a machine-readable medium containing instructions which, when executed, effect the following: integrating a digital watermark into content, distributing said content over a network as distributed content, receiving said distributed content in at least one location of said network and "analyzing said digital watermark of said distributed content for information indicative of the quality of said distributed content." By analogy to the discussion above for claim 1, Downs does not disclose every element and limitation recited in the claim. Specifically, Downs does not disclose that the watermark is itself used in any way to determine the degradation of content received from a network. Downs therefore cannot disclose, teach or suggest a machine-readable medium containing a combination of instructions including "analyzing said digital watermark of said distributed content for information indicative of the quality of said distributed content." Applicant submits that Downs therefore cannot anticipate claim 11 and respectfully requests withdrawal of the rejection and allowance of the claim.

5. Downs does not anticipate independent claim 14 because it does not disclose every element and limitation of the claim.

Claim 14 recites a system including means to serve content that is connected to a network, said means to serve content capable of delivering content over said network, said content containing a digital watermark, and "means for monitoring to receive said content over said network and analyzing said digital watermark for information indicative of degradation of said content." By analogy to the discussion above for claim 1, Downs does not disclose every element and limitation recited in the claim. Specifically, Downs does not disclose that the

watermark is itself used in any way to determine the degradation of content received from a network. Downs therefore cannot disclose, teach or suggest a system combination including "means for monitoring to receive said content over said network and analyzing said digital watermark for information indicative of degradation of said content." Applicant submits that Downs therefore cannot anticipate claim 14 and respectfully requests withdrawal of the rejection and allowance of the claim.

6. Dependent Claims 2, 3, 4, 9, 10, 12, 13, 15, 16 and 17 are not anticipated by Downs.

Claims 2, 3, 4, 9, 10, 12, 13, 15, 16 and 17 all depend on allowable independent claims, as discussed above. These dependent claims are therefore allowable for at least the same reasons as the dependent claims, as well as by virtue of the features recited in the claims. Applicant therefore respectfully requests withdrawal of the rejections and allowance of these claims.

C. Dependent claims 5, 6, 18, and 19 are not rendered obvious by Downs in view of Kawaguchi.

To establish a *prima facie* case of obviousness, the Examiner must establish that three criteria are met: (1) the prior art references must teach or suggest all the claim limitations; (2) some suggestion or motivation to combine the references must be found in the prior art; and (3) there must be a reasonable expectation of success. MPEP § 2143. As explained below, the Examiner has not established a *prima facie* case of obviousness with respect to claims 5, 6, 18, and 19.

1. Summary of the Examiner's rejection.

The Examiner's allegations and arguments regarding Downs are presented and discussed above. In rejecting claims 5, 6, 18, and 19 as obvious over Downs in view of Kawaguchi, the Examiner presented the following argument regarding Kawaguchi's disclosure and its combination with Downs:

> It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use checkerboard pattern as taught by Kawaguchi in the system of Downs because Kawaguchi provide Downs a technique for hiding confidential information in a color image that is not based on a programming technique, but

> rather on a property of a human vision system. This technique provides an information hiding capacity of as much as 50% of the original image data and some circumstances [*sic*], may provide hiding capacities in excess of 50%.

2. Dependent claims 5 and 6 are not rendered obvious by Downs in view of Kawaguchi.

Claims 5 and 6 depend on independent claim 1, and therefore incorporate all the elements and limitations of claim 1. Down's failure to disclose every element and limitation in claim 1, from which claims 5 and 6 depend, is discussed above. Kawaguchi is cited by the Examiner only for its disclosure of the checkerboard pattern and a technique for hiding confidential information in a color image based on a property of a human vision system. Kawaguchi does not disclose, nor does the Examiner allege that Kawaguchi discloses a monitor station to receive said content over said network and analyzing said digital watermark for information indicative of degradation of said content. Because Downs and Kawaguchi, whether taken individually or in combination, fail to teach every element and limitation of claims 5 and 6, Applicant submits that claims 5 and 6 cannot be rendered obvious by these references. Applicant therefore respectfully requests withdrawal of the rejections and allowance of claims 5 and 6.

3. Dependent claims 18 and 19 are not rendered obvious by Downs in view of Kawaguchi.

Claims 18 and 19 depend on independent claim 14, and therefore incorporate all the elements and limitations of claim 14. Down's failure to disclose every element and limitation in claim 14, from which claims 18 and 19 depend, is discussed above. Kawaguchi is cited by the Examiner only for its disclosure of the checkerboard pattern and a technique for hiding confidential information in a color image based on a property of a human vision system. Kawaguchi does not disclose, nor does the Examiner allege that Kawaguchi discloses means for monitoring to receive said content over said network and analyzing said digital watermark for information indicative of degradation of said content. Because Downs and Kawaguchi, whether taken individually or in combination, fail to teach every element and limitation of claims 18 and 19, Applicant submits that claims 18 and 19 cannot be rendered obvious by these references. Applicant therefore respectfully requests withdrawal of the rejections and allowance of claims 18 and 19.

D. The three different claim groups stand and fall independently of the others because they recite features that make them patentably distinct from claims in the other groups.

In section VII above, Applicant indicates that the claims on appeal fall into three groups, each of which stands or falls independently from the others. Claims 1-3, 5-7, 8, 9, 11, 12, 14-16, 18 and 19 stand or fall together, claims 4 and 17 stand or fall together, and claims 10 and 13 stand or fall together.

1. Dependent claims 4 and 17 stand and fall together and are not anticipated by Downs.

Dependent claims 4 and 17 stand and fall together because both claims recite additional features that render these claims patentably distinct from their base and intervening claims, which fall into a different group. Specifically, claim 4 adds to base claim 1 "a content server monitor station to receive said content directly from said content server and analyzing said digital watermark." Claim 17 adds a similar limitation to base claim 14. Even if Downs disclosed every element and limitation of each base claim—although Applicant has shown above that it does not—the additional features recited in claims 4 and 17 would render the claims separately patentable, because the features recited in these claims are not disclosed, taught or suggested by Downs or any other reference found or cited by the Examiner.

2. Claims 10 and 13 stand and fall together and are not anticipated by Downs.

Dependent claims 10 and 13 stand and fall together because both claims recite additional features that render these claims patentably distinct from their base and intervening claims, which fall into a different group. Specifically, claim 10 adds to base claim 8 and intervening claim 9 "comparing the information indicative of the quality of said distributed content to the information indicative of the quality of said content.." Claim 13 adds to base claim 11 "instructions for comparing the information indicative of the quality of said distributed content to the information indicative of the quality of said content." Even if Downs disclosed every element and limitation of each base claim and any intervening claims—although Applicant has shown above that it does not—the additional features recited in claims 10 and 13 would render the claims separately patentable, because the features recited in these claims are not disclosed, taught or suggested by Downs or any other reference found or cited by the Examiner.

IX. CONCLUSION

Given the above arguments supporting patentability, Applicant believes all claims on appeal are in condition for allowance. If the undersigned attorney has overlooked a teaching in any of the cited references that is relevant to allowance of the claims, the Examiner is requested to specifically point out where such teaching may be found. Further, if there are any informalities or questions that can be addressed via telephone, the Examiner is encouraged to contact the undersigned attorney at (206) 292-8600.

Charge Deposit Account

Please charge our Deposit Account No. 02-2666 for any additional fee(s) that may be due in this matter, and please credit the same deposit account for any overpayment.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

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APPENDIX

1. (Original) A system comprising:

a content server connected to a network, said content server capable of delivering content over said network, said content containing a digital watermark; and

at least one monitor station to receive said content over said network and analyzing said digital watermark for information indicative of degradation of said content.

2. (Original) The system of Claim 1 wherein said network is the Internet.

3. (Original) The system of Claim 1 wherein said content is multimedia content.

4. (Original) The system of Claim 1 further including a content server monitor station to receive said content directly from said content server and analyzing said digital watermark.

5. The system of Claim 1 wherein said digital watermark is a checkerboard pattern or a gray-scale image.

6. (Original) The apparatus of Claim 1 wherein said content server is a broadcast operations center to serve content to a plurality of edge serving sites.

7. (Original) The apparatus of Claim 6 wherein a monitor station is located at one of said plurality of edge serving sites.

8. (Original) A method, comprising:

integrating a digital watermark into content;

distributing said content over a network as distributed content;

receiving said distributed content in at least one location of said network;

analyzing said digital watermark of said distributed content for information indicative of the quality of said distributed content.

9. (Original) The method of Claim 8, further including analyzing said content prior to distribution over said network for information indicative of the quality of said content.

10. (Original) The method of Claim 9, further including comparing the information indicative of the quality of said distributed content to the information indicative of the quality of said content.

11. (Original) A machine-readable medium having stored thereon instructions, which if executed by a processor, cause the processor to effect the following, comprising:

integrating a digital watermark into content;

distributing said content over a network as distributed content;

receiving said distributed content in at least one location of said network;

analyzing said digital watermark of said distributed content for information indicative of the quality of said distributed content.

12. (Original) The machine-readable medium of Claim 10, further including instructions for analyzing said content prior to distribution over said network for information indicative of the quality of said content.

13. (Original) The machine-readable medium of Claim 11, further including instructions for comparing the information indicative of the quality of said distributed content to the information indicative of the quality of said content.

14. (Original) A system comprising:

means to serve content that is connected to a network, said means to serve content capable of delivering content over said network, said content containing a digital watermark; and

means for monitoring to receive said content over said network and analyzing said digital watermark for information indicative of degradation of said content.

15. (Original) The system of Claim 14 wherein said network is the Internet.

16. (Original) The system of Claim 14 wherein said content is multimedia content.

17. (Original) The system of Claim 14 further including a content server monitor station to receive said content directly from said means for serving content and analyzing said digital watermark.

18. (Original) The system of Claim 14 wherein said digital watermark is a checkerboard pattern or a gray-scale image.

19. (Original) The apparatus of Claim 14 wherein said means to serve content is a broadcast operations center for serving content to a plurality of edge serving sites.

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Attorney's Docket No.: 42P9903 Patent

In re the Application of: Andrew Kuzma
(inventor(s))

Application No.: 09/728,572

Filed: November 30, 2000

For: APPARATUS AND METHOD FOR MONITORING STREAMED MULTIMEDIA QUALITY USING DIGITAL WATERMARK
(title)

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SIR: Transmitted herewith is an **Appeal Brief** for the above-referenced application.

_____ Applicant claims small entity status. See 37 CFR 1.27.

XX **No additional claim fee is required.**

XX **A check for $330 is included for a fee in support of an appeal.**

The fee has been calculated as shown below:

	(Col. 1) Claims Remaining After Amd.		(Col. 2) Highest No. Previously Paid For	(Col. 3) Present Extra	SMALL ENTITY Rate	SMALL ENTITY Additional Fee	OTHER THAN A SMALL ENTITY Rate	OTHER THAN A SMALL ENTITY Additional Fee
Total Claims	* 19	Minus	** 20	0	X9	$	X18	$ 0
Indep. Claims	* 4	Minus	*** 4	0	X43	$	X86	$ 0
☐	**First Presentation of Multiple Dependent Claim(s)**				**+145**	**$**	**+290**	**$**
					Total Add. Fee	$	Total Add. Fee	$ 0

* If the entry in Col. 1 is less than the entry In Col. 2, write "0" in Col. 3.

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_____ A check in the amount of $_____ is attached for presentation of additional claim(s).

_____ Applicant(s) hereby Petition(s) for an Extension of Time of _____ month(s) pursuant to 37 C.F.R. § 1.136(a).

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